

ULTRAWIDE BANDWIDTH SYSTEM AND METHOD
FOR FAST SYNCHRONIZATION USING SUB-CODE SPINS

ABSTRACT OF THE DISCLOSURE

5 A UWB communication system and method for fast synchronization of one
transceiver with another using the incoming UWB signal, where synchronization is achieved
in less than a full code wheel spin. An exemplary embodiment includes a UWB waveform
correlator, a timing generator, and a controller wherein the controller examines the correlator
outputs as the code-wheel spins, and generates control signals to cause the timing generator to
10 stop and track the incoming UWB signal whenever the incoming signal is received with
sufficient SNR to provide a predetermined quality of service such as bit-error rate (BER).
This embodiment will in any case determine when the receiver has been substantially
synchronized with an incoming signal, yet without an exhaustive search of the entire code-
wheel.

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